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ABSTRACT

A collaborative day care and public school kindergarten intervention program for children in several public housing projects in Boston was evaluated by means of the Bronson Social and Task Skill Profile, a classroom observation instrument. This instrument has categories that measure behaviors related to competence in carrying out social interactions and mastery tasks. The intervention group, and comparison children from the same classrooms, were observed four times over a 2-year period--in the fall and spring of their pre-kindergarten and kindergarten years. Comparison children came from the same working class neighborhood as those in the intervention group, but had more economic advantages. Almost none were minority group members. Results demonstrated a progressive catch up effect in most observed behavior categories for the intervention group in relation to the comparison sample. Very poor performance by a few children who were eligible for the intervention but did not receive it further underlined the effectiveness of the intervention. The inclusion of both social and mastery categories in the observation instrument proved useful in providing information on areas of skill and weakness in the samples. (Author/RH)

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Longitudinal Evaluation of a Collaborative Public School and Day Care Intervention Program in Preschool and Kindergarten

Martha B. Bronson

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ABSTRACT

A collaborative dar care and public school intervention program for children in several public housing projects in Boston was evaluated with the Bronson Social and Task Skill Profile, a classroom observation instrument. This instrument has categories that measure behaviors related to competence in carrying out social interactions and mastery tasks. The intervention group, and comparison children from the same classrooms, were observed four times over a two year period - in the fall and spring of their prekindergarten and kindergarten years. Comparison children came from the same working class neighborhood, but were economically more advantaged and had almost no minority group members. The results demonstrate a progressive "catch up" effect in most observed behavior categories for the intervention group in relation to the comparison sample. Very poor performance in a few children, eligible for the intervention but not receiving it, further underlines the effectiveness of the intervention. The inclusion of both social and mastery categories in the observation instrument proved useful in providing information on areas of skill and weakness in the samples.

Longitudinal Evaluation of a Collaborative Public School and Day Care Intervention Program in Preschool and Kindergarten

Martha B. Bronson
Boston College

Since the 1960's public interest has focused on early education as an important way of developing the potential of children and ameliorating their problems. A number of public and privately funded programs have provided educational and preventive social services for poor children and their families. Recent reform and funding initiatives from the Bureau of Early Childhood and Special Education in the state of Massachusetts have also stressed the advantages of collaboration among agencies serving children.

This paper outlines the use of the Bronson Social and Task Skill Profile to evaluate the effects of a collaborative intervention program developed by a day care center serving public housing developments and a Boston public elementary school. Children in the program and comparison samples from the same classrooms were observed in their public school classrooms in the fall and spring of their prekindergarten and kindergarten years. Changes in observed behaviors of program and comparison samples over the two year period will be described.

The effort to evaluate preschool and day care programs has been the subject of continuing debate in both the research and early childhood communities. A great deal of criticism was directed at the early, very visible and politically explosive, analyses of Head Start (Smith and Bissell, 1970; Walker, Bane and Bryk, 1973; Butler, 1974; Raisen and Bobrow, 1974). Major targets of this criticism were the heavy reliance placed on intelligence tests as outcome measures and the difficulty of testing young children in artificial settings

Funding for this research was provided by the Bernard van Leer Foundation of The Netherlands

(Zigler and Butterfield, 1968; McClelland, 1973; Zigler et al., 1975). Critics stressed the importance of focusing on social (or functional) competence, which was defined to include cognitive, social, and motivational dimensions (Walker, 1974; Anderson and Messick, 1974; Zigler and Tricket, 1978; Gotts, 1979; Zigler and Seitz, 1980; Scarr, 1981).

The debate about appropriate measures for the evaluation of young children has not diminished (Meisels, 1985; Bredekamp, 1987; Cunningham, 1989) but research has suggested that evaluation of programs for young children is most informative when assessments address a broad range of skills and abilities and when there is a long term or longitudinal perspective (Bronfenbrenner, 1974; Zigler and Trickett, 1978; Schweinhart and Weikart, 1980; Scarr, 1981; Lazar and Darlington, 1982; Bergan et al., 1984).

This study used the Bronson Social and Task Skill Profile (Bronson, 1975, 1978, 1981, 1985; Pierson et al., 1983; Bronson et al., 1984; Casey & Bronson, 1987) because it addresses several of the concerns raised in the literature on testing young children. It is an observation measure that uses trained observers to record specific behaviors in the natural setting of the classroom. By relying on the frequency of specific classroom behaviors from the vantage point of a trained observer, the instrument avoids the traditional reliance of educational evaluations either on tests individually administered outside the classroom or on normative rating schemes. It also focuses on a wide variety of social and task-oriented behaviors usually considered important for competent functioning by school systems.

METHOD

Program Description

The Washington-Beech Community Daycare Center (WBCDC) is a project of the Committee for Boston Public Housing. Children enrolled in the center are able to take advantage of a center-based preschool program as well as the prekindergarten and kindergarten programs at a neighboring Boston public elementary school. This collaborative effort is intended to address the developmental needs of three to six year old children, and at the same time provide reliable all day childcare that allows parents to work or enter education and employment training programs. The day care center serves low income children, primarily from public housing developments in the area of the elementary school.

The Center operates on a full day (7:30 a.m. - 5:30 p.m.), full year basis, closing only for major holidays. It incorporates a multicultural and developmental educational philosophy into all aspects of its curriculum and activities. The program emphasizes social and emotional growth, with a focus on cooperation and sharing. There is also an effort to help children explore other cultures and to support their self-concepts.

The youngest children (ages two years, nine months to four years) spend the full day at the Center, with the preschool program incorporated into the daily activities. During the school year, four and five year olds attend the regular two and one-half hour prekindergarten and kindergarten programs at the local public elementary school. They join the other children and staff at the Center for the remaining four to seven and one half hours of the day. Children typically attend the Center program both before and after school.

The program is unique because it has utilized the combined resources of the Boston Public Schools for the prekindergarten and kindergarten components, the

Department of Social Services for the early childhood and extended day components, and the Boston Public Housing Authority/Executive Office of Communities and Development for daycare classroom space and renovation. Because of the provision of care, parents who have children in the Center are able to participate in employment and training programs, attend school and/or maintain stable employment. A separate study of parent involvement in the program indicated that parents felt confident to pursue these other options because of the comprehensive care offered by the Center.

Subjects

Two successive cohorts of children from the Washington Beech Day Care Center were observed in their classrooms over a two year period at the Bates public school, with comparison samples from the same classrooms. Data was gathered at four time periods for all children: the fall and spring of the prekindergarten and kindergarten years.

The working class neighborhood of the school, and the housing development in particular, had many population shifts. A few children who started in the fall of the prekindergarten year left before the spring assessment, and one of the WBCDC sample who had left, returned for the kindergarten year. Table 1 shows the sample sizes and composition at the four data collection periods.

Insert Table 1 about here

The sample of 18 children in the kindergarten comparison group included 4 children added to replace 4 children who left before the spring of the prekindergarten year. It was not possible to completely match the WBCDC group for

age, sex and race because the numbers in the classroom were limited. All but 3 of the WBCDC group were black or hispanic. All but 1 of the Comparison sample were white.

There was also a small sample of children (3 by the spring of prekindergarten and 5 by the fall of the kindergarten year) who had dropped out of the WBCDC program or had very limited services for a variety of reasons. It seemed important to continue to follow these children in both cohorts to see if there were any effects after the day care and related services were discontinued. This group, though very small, is also significant because the characteristics of the Comparison sample did not match those of the WBCDC sample in the same way that the "Low Service" (eligible but less served) group did. Comparison children did not live in public housing, nor did they meet the eligibility criteria for other services based on low income or high risk. Comparison samples also included almost no minority group members. This meant that this group started out with a significant advantage and were not really "comparable" to the WBCDC sample, as the "Low Service" group was. Four of the "Low Service" children were black and 1 was white.

Measure

The observation instrument, the Bronson Social and Task Skill Profile uses structured categories to record a child's performance in planning and organizing work, interacting cooperatively with others, and carrying out social interactions and learning tasks successfully. The concepts of organization and planning are applied to both social and learning activities, and the categories focus on using effective strategies for choosing and reaching goals.

The observations covered 12 variables, divided into three areas of behavior: mastery skills, social skills, and use of time. Each area contains categories

which are positively or negatively related to skill in that area. The mastery skills area includes these variables designed to measure a child's skill in planning and carrying out school tasks with goals: successful completing of tasks, use of appropriate task attack strategies, and distraction from tasks.

The social skills area includes six variables positively or negatively related to competence in social interaction in the school setting: cooperative interaction with peers, use of effective cooperative strategies, success in influencing others, the use of language (rather than physical force) to influence others, hostility to others, and resistance to teachers.

The use of time category consists of three variables which reveal the focus of the child's involvement in the classroom: percent of time spent in mastery activities, percent of time spent in social activities, and percent of time spent without any focused activity.

Each observation variable yields a rate or percent score based on a full set of six 10-minute observations.

Insert Table 2 about here

Procedures

Trained observers followed and recorded the behavior of each child for six 10-minute periods in each of the four data collection periods. The observations were spaced over several weeks to minimize the effects of atypical days. The modified time-sampling procedure required that three of the observations begin at the start of a social interaction and three at the start of a mastery task. Behaviors were recorded on a sheet that allows recording of both the frequency and duration of specific behavior categories. Time was monitored with a stop watch.

Observers were trained to a minimum of 90% criterion of reliability in each category. They did not know which children belonged to the various sample groups.

RESULTS

Table 3 shows the differences between the mastery category means of the three sample groups for the four time periods observed. Figures 1, 2 and 3 illustrate these differences in graphic form. The means of both the WBCDC and

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Insert Table 3 and Figures 1, 2 and 3 about here

Low Service WBCDC groups are compared with the mean scores of the Comparison sample. Although only the Low Service group differences reach significance, the pattern of increasing skill in the WBCDC children and the reduced scores of the Low Service sample is clear. The small numbers of children in the three groups maximizes the impact of individuals and minimizes the probability of any group differences reaching significance. Changes in the samples (as noted above and in Table 1) may also create instability in group scores over time. In spite of these handicaps, the pattern of performance of the three groups is coherent.

The WBCDC children had been enrolled in a developmental day care program before entering the public school prekindergarten. They still had lower scores than the Comparison sample in every mastery category when they entered school in the fall, though the differences were not significant. They improved during the prekindergarten year, but their scores remained behind the Comparison sample in every category. The WBCDC group continued to experience the developmental day care program over the summer months. During the kindergarten year they caught

up to and even surpassed Comparison children in two out of the three mastery categories. The Low Service children (eligible but receiving low or interrupted WBCDC services) show a significantly lower pattern of performance from prekindergarten on. All three groups of children tended to improve in mastery skills over the two year period, but the Low Service children remained well below the other two groups.

Table 4 shows the differences between the category means of positive social behaviors for the three sample groups in the four observation periods. Figures 3, 4, 5, and 6 illustrate these differences in graphic form. The data shows that WBCDC children entered school with lower scores on three out of four

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Insert Table 4 and Figures 4, 5, 6, and 7 about here

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of the social variables and remained lower in the spring, though only one of these differences was significant (the Percent Success in Influencing Peers in the fall). In kindergarten the WBCDC children again caught up with Comparison children and surpassed them in three out of four categories. By the spring of the kindergarten year, they scored significantly above Comparison children in the percent of social time spent in high level cooperative play and in their rate of use of cooperative strategies. It should be noted again here that the WBCDC program had a consistent emphasis on social emotional growth, with a focus on cooperation and sharing.

The Low Service children spent less social time at the cooperative level of interaction and used fewer cooperative strategies at all observation points. They were less apt to use words to influence others and less likely to influence

them successfully at each successive observation period. Though not performing below the other groups in prekindergarten, their performance on these variables steadily declined to low points that reached or approached significance by the spring of the kindergarten year.

Table 5 shows the differences between the category means of the negative social behavior variables observed in the three sample groups in each of the four observation periods. Figures 8 and 9 illustrate these differences in graphic form.

Insert Table 5 and Figures 8 and 9 about here

The Comparison sample had lower negative behavior scores than both the WBCDC and Low Service groups at every observation point, and their scores were often significantly lower. The negative behaviors of the Low Service children, however, were much more frequent than either of the other two groups, and were somewhat extreme by the spring of the kindergarten year.

Table 6 shows the differences between the means of the use of time variables for the three sample groups in each of the four observation periods. Figures 10, 11, and 12 illustrate these differences in graphic form. The Comparison sample

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Insert Table 6 and Figures 10, 11, and 12 about here

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consistently spent more time in mastery activities and less time in social interaction than the other two groups. Time spent uninvolved was relatively low for all groups at all time points. The Comparison and WBCDC samples

showed the same tendency to reduce the amount of uninvolved time from fall to spring in both prekindergarten and kindergarten, but the Low Service children showed a steady increase in uninvolved time at each successive observation period.

CONCLUSIONS AND DISCUSSION

The results demonstrate a progressive "catch-up" effect in most observed behavior categories for the intervention group in relation to the comparison sample. In the mastery skills area in the prekindergarten year, the intervention group was less successful in completing cognitive tasks, used fewer task attack strategies, and was more distractable in tasks. By the spring of the kindergarten year the intervention group was equal or slightly superior to the Comparison children in all mastery categories. By contrast, the group of five children who were eligible but had minimal intervention services were significantly less successful in completing tasks, used significantly fewer strategies, and were significantly more distractable than either the intervention or the Comparison samples.

In the social skills area, in the prekindergarten year, the WBCDC children spent less of their social time in cooperative interaction, were less successful in influencing others, were more hostile to peers and resisted teachers more often than the Comparison children. By the spring of the kindergarten year, the intervention group spent significantly more of their social time in cooperative interaction than the Comparison sample, used more cooperative strategies, and was equally successful in influencing others. They were still more hostile to peers and resisted teachers more often than Comparison children. Again the low income, Low Services group showed fewer skills than either of the other two groups. They were less cooperative, used fewer strategies, used language less

often than physical force to influence others, and were significantly less successful. They were also much more hostile to peers and resisted teachers much more than the WBCDC or Comparison samples.

In the use of time area there were some interesting consistencies. The WBCDC children spent relatively more time in social interaction and relatively less time engaged in mastery tasks than Comparison children at each of the four observation points. This effect was more pronounced for the Low Services children, who spent even less time in mastery activities and much more time in social interaction at two of the three of the observation points than either of the other groups.

The steady increase in skills in the full service WBCDC group, to the point where they surpassed the comparison group in several important mastery and social variables, combined with the much lower level of skills shown by the Low Service group, provides support for the effectiveness of the intervention. The WBCDC sample not only had socioeconomic disadvantages in relation to the comparison group, it was also slightly younger and had relatively more boys (see Table 1). Being younger or male is usually associated with lower skills in preschool and kindergarten, and background analyses of the data from this study showed that girls and older children tended to show higher profiles of skills in all areas observed. In spite of this, the WBCDC children outperformed the Comparison sample, and the Low Service group, which was slightly older and had relatively more girls than either of the other groups, had the worst profile of skills. The behavior scores of the Low Service children showed lower skills in both the mastery and social areas, and, although they improved while in the public school setting, their relative deficits in relation to the other groups remained. Given this group's demographic similarity to the WBCDC sample, these continuing deficits underline the effectiveness of the intervention.

The small sample sizes and the changes in the samples over the observation period present problems in interpreting the data. However, the consistent patterns that do emerge provide support for the strength of an effect that holds up under even these conditions. The reduction in disparity between the WBCDC and comparison groups cannot be explained away by any changes in the samples, since it always remained true that the WBCDC group had every risk factor against it at each assessment period. The low performance of the Low Service Group suggests the power of those risk factors, even after the Low Service children had spent two years in public school prekindergarten and kindergarten programs.

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TABLE 1

General Sample Characteristics for Comparison, WBCDC and Low Service Groups Observed in Pre-K and Kindergarten at the Bates School

	COMPARISON	WBCDC	LOW SERVICE
Pre-K Fall	N = 18	N = 20	-
	$\bar{X}$ age = 54 mo.	$\bar{X}$ age = 54 mo.	-
	8 female	10 female	-
	10 male	10 male	-
Pre-K Spring	N = 14	N = 17	N = 3
	$\bar{X}$ age = 61 mo.	$\bar{X}$ age = 59 mo.	$\bar{X}$ age = 55 mo.
	7 female	8 female	2 female
	7 male	9 male	1 male
K Fall	N = 18	N = 18	N = 5
	$\bar{X}$ age = 67.5 mo.	$\bar{X}$ age = 65 mo.	$\bar{X}$ age = 68 mo.
	10 female	9 female	3 female
	8 male	9 male	2 male
K Spring	N = 18	N = 18	N = 5
	$\bar{X}$ age = 73.5 mo.	$\bar{X}$ age = 71 mo.	$\bar{X}$ age = 74 mo.
	10 female	9 female	3 female
	8 male	9 male	2 male

TABLE 2

Categories from Bronson Social and Nonsocial Skills Profile used in the Washington-Beech Community Day Care Longitudinal Evaluation

MASTERY SKILLS AREA

Percent Mastery Tasks Completed Successfully

Rate Use of Task Attack Strategies

Percent of Mastery Time Distracted

SOCIAL SKILLS AREA

Percent of Social Time in Cooperative Interaction

Rate Use of Cooperative Strategies

Percent Successful Attempts to Influence Peers

Percent Use of Language in Attempts to Influence Peers

Rate Shows Hostility

Rate Resists Teachers

USE OF TIME AREA

Percent of Time in Mastery Activities

Percent of Time in Social Activities

Percent of Time Uninvolved

TABLE 3

Differences Between the Mastery Variable Means of Comparison, WBCDC, and Low Service Groups in the Fall and Spring of the Prekindergarten and Kindergarten Years

	Observation Periods			
	PreKindergarten		Kindergarten	
MASTERLY VARIABLES	FALL	SPRING	FALL	SPRING
Percent of Mastery Tasks Completed Successfully:				
Comparison	**80**	**93**	**92**	**85**
	(18)	(14)	(11)	(12)
WBCDC	**77**	**86**	**88**	**91**
	(14)	(10)	(15)	(11)
Low Service	--	**36****	**63****	**68**
	--	(13)	(42)	(13)
Rate Task Attack Strategies:				
Comparison	**2.0**	**2.9**	**2.5**	**2.6**
	(.6)	(.9)	(.6)	(.8)
WBCDC	**1.9**	**2.4(*)**	**2.7**	**2.8**
	(.7)	(.6)	(.9)	(.8)
Low Service	--	1.2****	1.8(*)	1.8(*)
	--	(.3)	(1.0)	(.9)
Percent of Mastery Time Distracted				
Comparison	**4.6**	**5.0**	**2.7**	**1.8**
	(5.3)	(7.0)	(4.9)	(4.4)
WBCDC	**6.0**	**8.0**	**4.7**	**2.9**
	(9.9)	(7.0)	(6.8)	(6.2)
Low Service	--	**27.7****	**11.1***	**5.9***
	--	(12.0)	(12.6)	

Values in parentheses are Standard Deviations.
WBCDC and Low Service Groups are compared with the Comparison Group.
Significance levels are based on t tests.

(*)$p < .10$ * $p < .05$ ** $p < .025$ *** $p < .01$ **** $p < .005$;

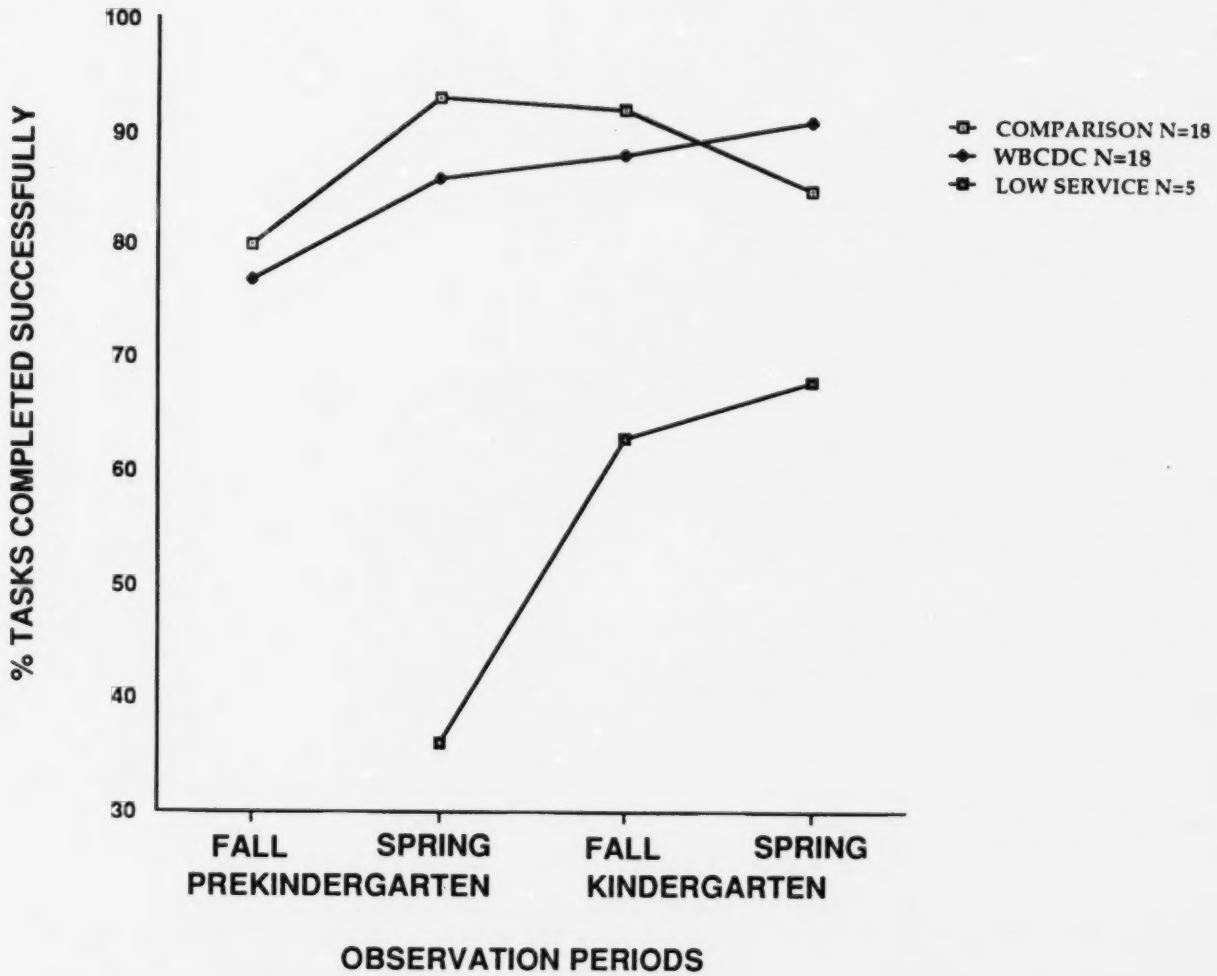

FIGURE 1 - MEAN PERCENTS OF TASKS COMPLETED SUCCESSFULL OF COMPARISON, WBCDC, AND LOW SERVICE GROUPS IN THE FALL AND SPRING OF THEIR PREKINDERGARTEN AND KINDERGARTEN YEARS

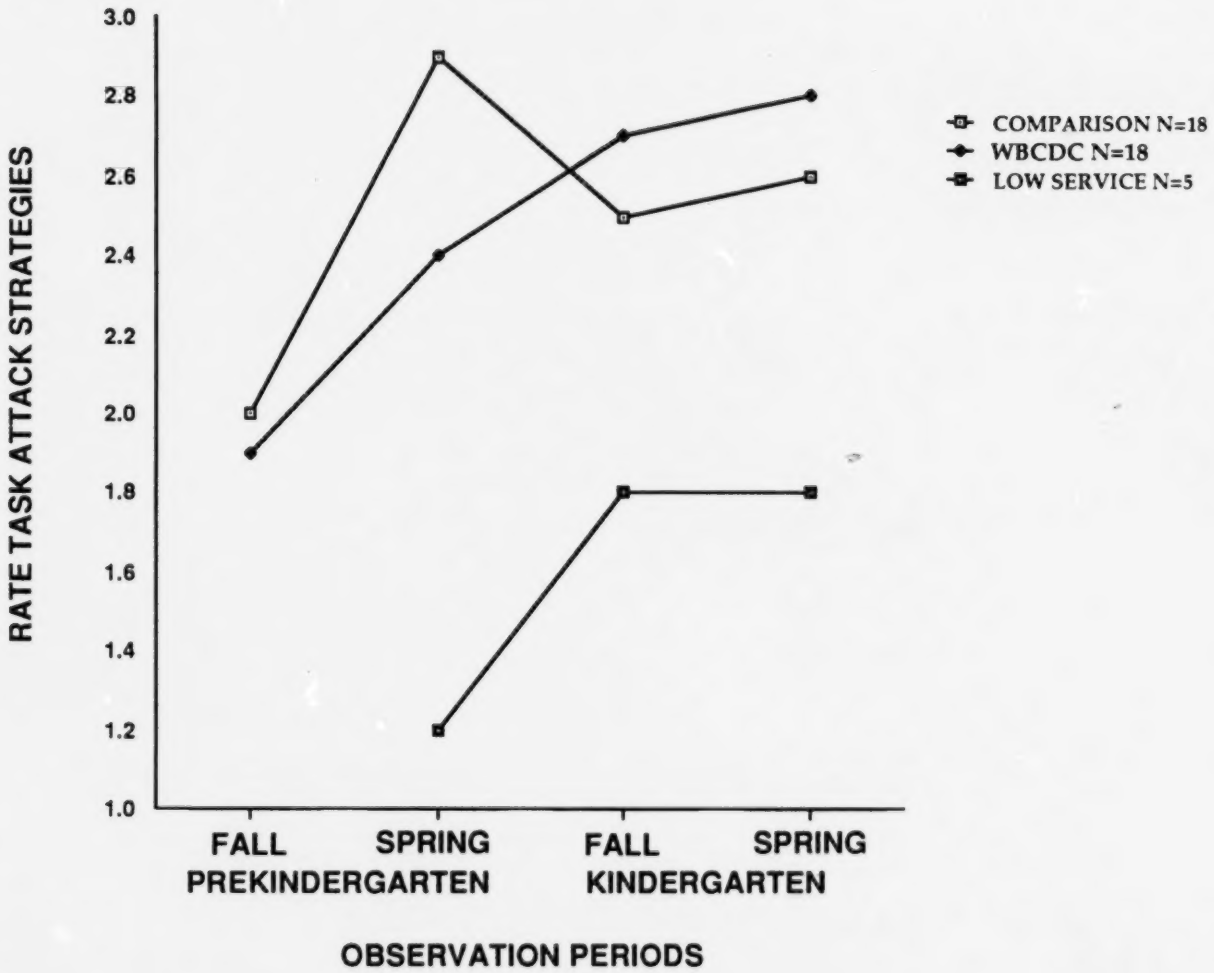

FIGURE 2 - MEAN RATES OF TASK ATTACK STRATEGIES OF COMPARISON, WBCDC, AND LOW SERVICE GROUPS IN THE FALL AND SPRING OF THEIR PREKINDERGARTEN AND KINDERGARTEN YEARS

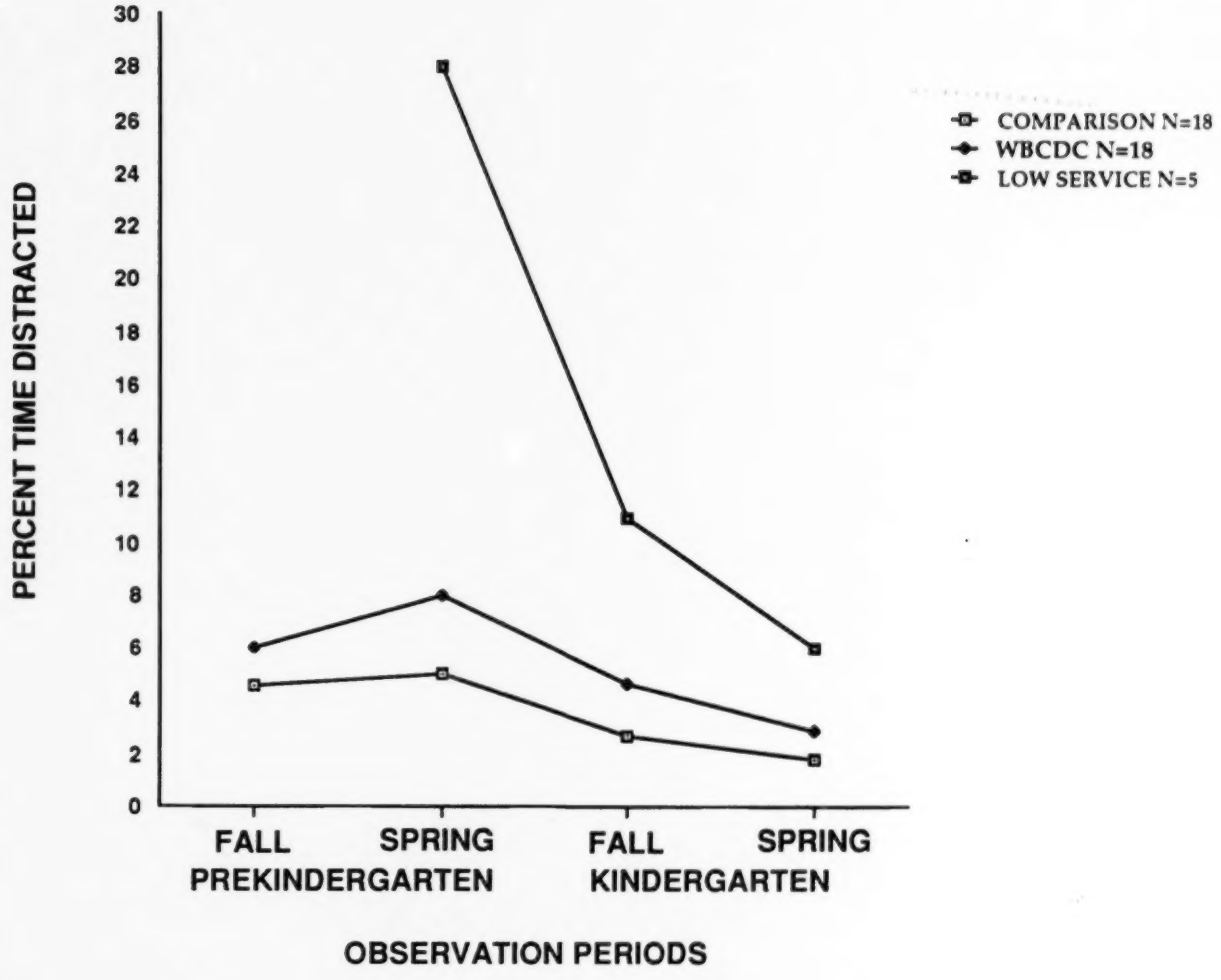

FIGURE 3 - MEAN PERCENTS OF TIME DISTRACTED OF COMPARISON, WBCDC, AND LOW SERVICE GROUPS IN THE FALL AND SPRING OF THEIR PREKINDERGARTEN AND KINDERGARTEN YEARS

TABLE 4

Differences Between the Positive Social Variable Means of Comparison, WBCDC, and Low Service Groups in the Fall and Spring of their Prekindergarten and Kindergarten Years

	Observation Periods			
	PreKindergarten		Kindergarten	
SOCIAL VARIABLES	FALL	SPRING	FALL	SPRING
Percent of Social time in Cooperative Interaction:				
Comparison	53	68	60	69
	(19)	(16)	(18)	(19)
WBCDC	47	65	73*	82.***
	(18)	(18)	(16)	(9)
Low Service	--	52	49	56
	--	(13)	(21)	(18)
Rate Cooperative Strategies:				
Comparison	.73	.79	.91	.89
	(.41)	(.40)	(.44)	(.36)
WBCDC	.61	.61	1.06	1.21*
	(.28)	(.40)	(.43)	(.47)
Low Service	--	.37***	.53(*)	.62
	--	(.10)	(.27)	(.33)
Percent Success in Influencing Peers:				
Comparison	85	86	79	82
	(10)	(10)	(14)	(13)
WBCDC	77***	81	85	82
	(.9)	(11)	(8)	(9)
Low Service	--	86	80	73(*)
	--	(7)	(10)	(7)
Percent Use of Language to Influence Peers:				
Comparison	81	83	85	89
	(13)	(12)	(9)	(7)
WBCDC	85	79	87	91
	(12)	(9)	(9)	(4)
Low Service	--	82	80	79**
	--	(8)	(2)	(10)

Values in parentheses are Standard Deviations.
WBCDC and Low Service Groups are compared with the Comparison Group.
Significance levels are based on t tests.

(*)p < .10 * p < .05 ** p < .025 *** p < .01 **** p < .005;

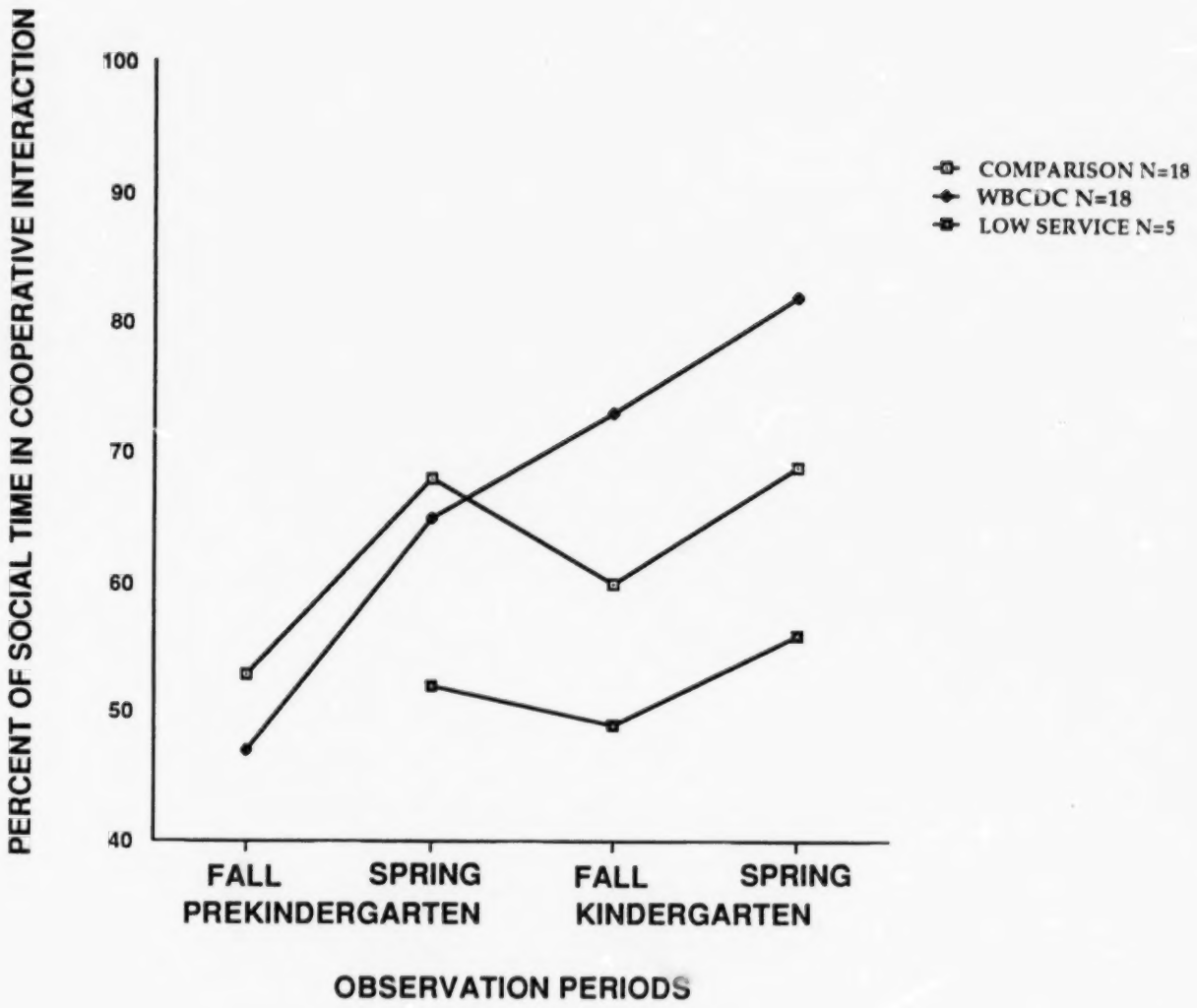

FIGURE 4 - MEAN PERCENTS OF SOCIAL TIME IN COOPERATIVE INTERACTION OF COMPARISON, WBCDC, AND LOW SERVICE GROUPS IN THE FALL AND SPRING OF THEIR PREKINDERGARTEN AND KINDERGARTEN YEARS

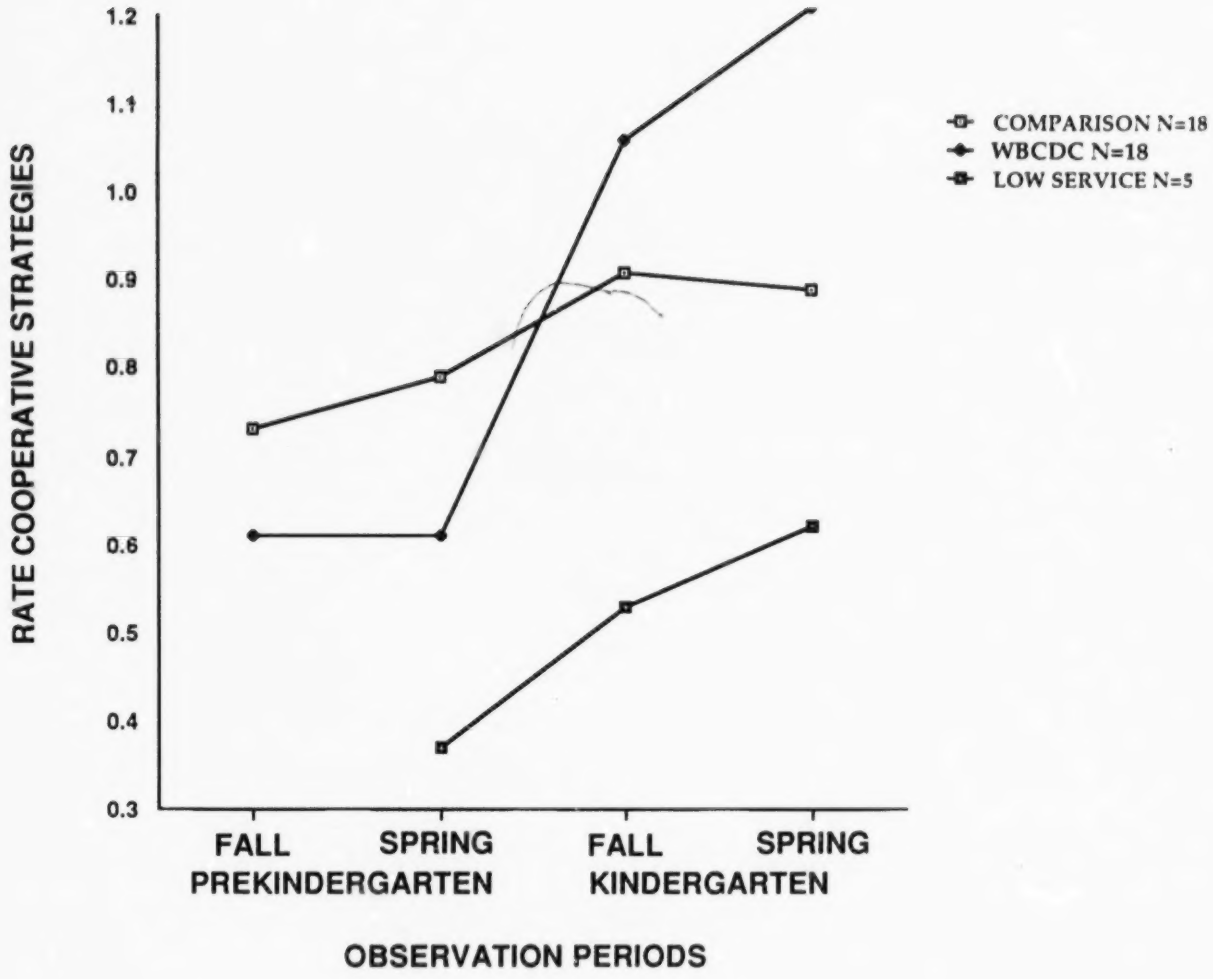

FIGURE 5 - MEAN RATES OF COOPERATIVE STRATEGIES OF COMPARISON, WBCDC, AND LOW SERVICE GROUPS IN THE FALL AND SPRING OF THEIR PREKINDERGARTEN AND KINDERGARTEN YEARS

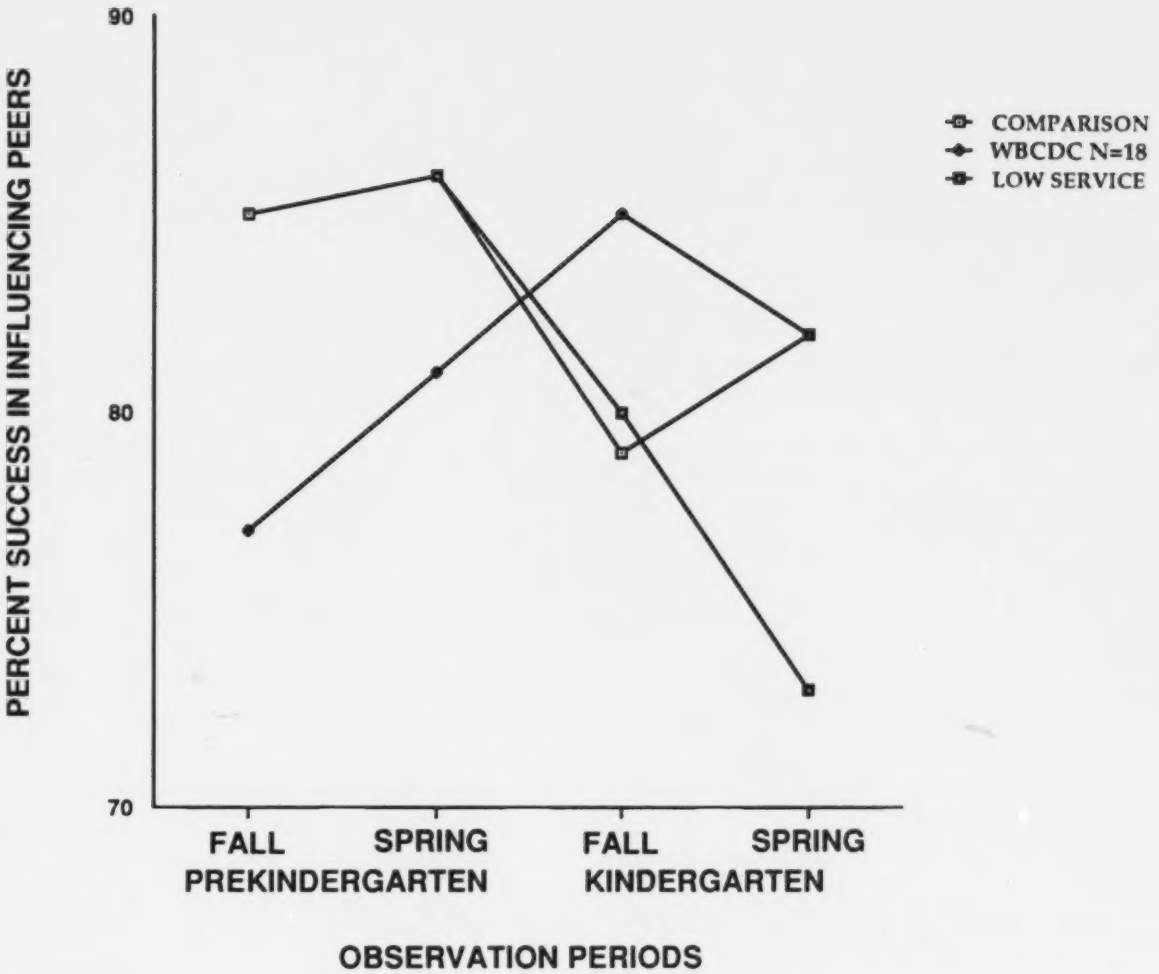

FIGURE 6 - MEAN PERCENTS OF SUCCESS IN INFLUENCING PEERS OF COMPARISON, WBCDC, AND LOW SERVICE GROUPS IN THE FALL AND SPRING OF THEIR PREKINDERGARTEN AND KINDERGARTEN YEARS

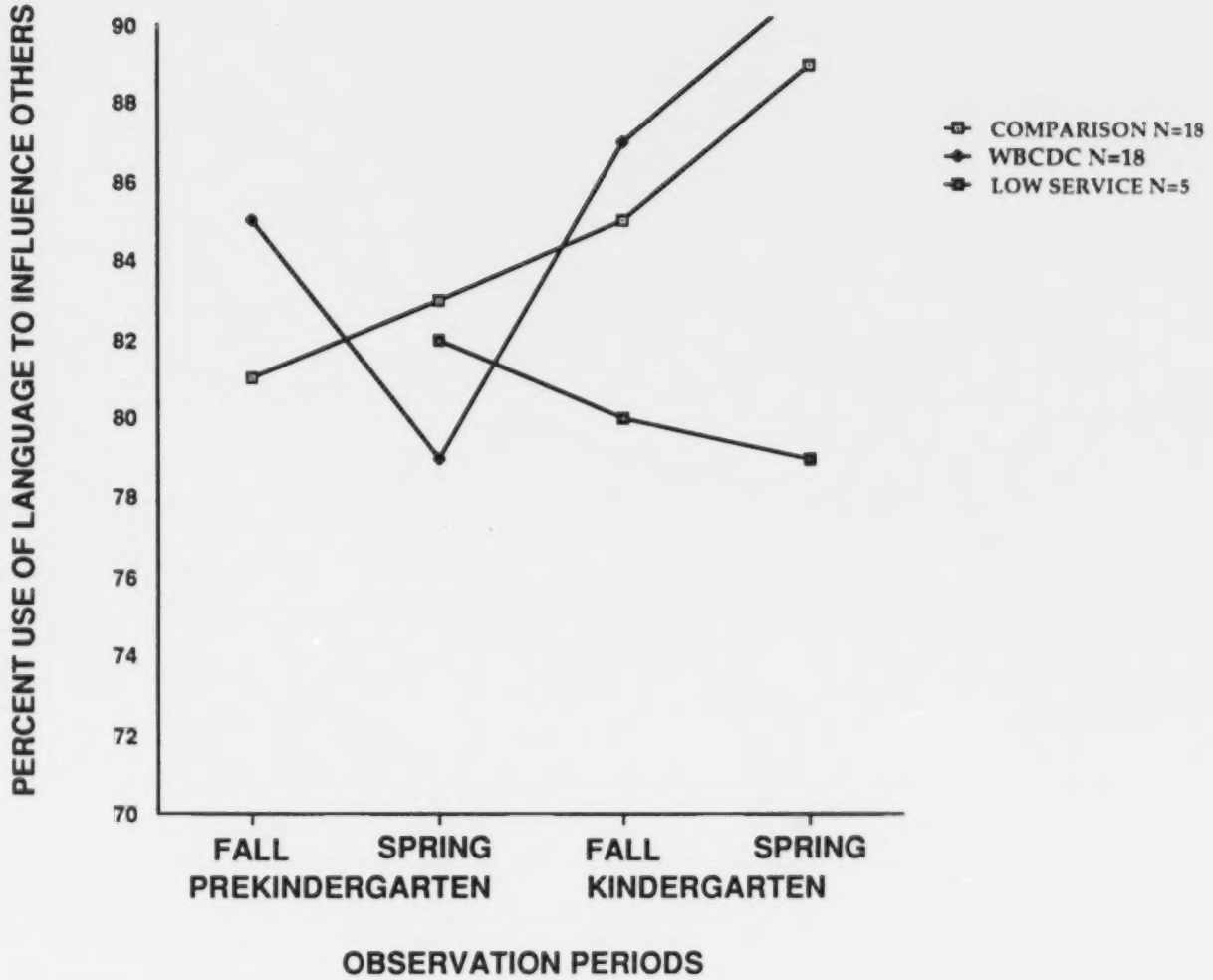

FIGURE 7 - MEAN PERCENTS OF USE OF LANGUAGE TO INFLUENCE OTHERS OF COMPARISON, WBCDC, AND LOW SERVICE GROUPS IN THE FALL AND SPRING OF THEIR PREKINDERGARTEN AND KINDERGARTEN YEARS

TABLE 5

Differences Between the Negative Social Variable Means of Comparison, WBCDC, and Low Service Groups in the Fall and Spring of their Prekindergarten and Kindergarten Years

	Observation Periods			
	Prekindergarten		Kindergarten	
NEGATIVE SOCIAL VARIABLES	FALL	SPRING	FALL	SPRING
Rate Shows Hostility:				
Comparison	.02	.01	.002	.006
	(.03)	(.02)	(.01)	(.01)
WBCDC	.02	.06**	.01(*)	.01(*)
	(.03)	(.07)	(.02)	(.02)
Low Service	--	.11***	.04****	.10***
	--	(.10)	(.05)	(.08)
Rate Resists Teachers:				
Comparison	.02	.02	.01	.01
	(.03)	(.03)	(.02)	(.02)
WBCDC	.05	.06*	.03	.04*
	(.09)	(.06)	(.04)	(.04)
Low Service	--	.05	.10**	.30***
	--	(.03)	(.10)	(.40)

Values in parentheses are Standard Deviations.
WBCDC and Low Service Groups are compared with the Comparison Group.
Significance levels are based on t tests.

(*) $p < .10$ * $p < .05$ ** $p < .025$ *** $p < .01$ **** $p < .005$

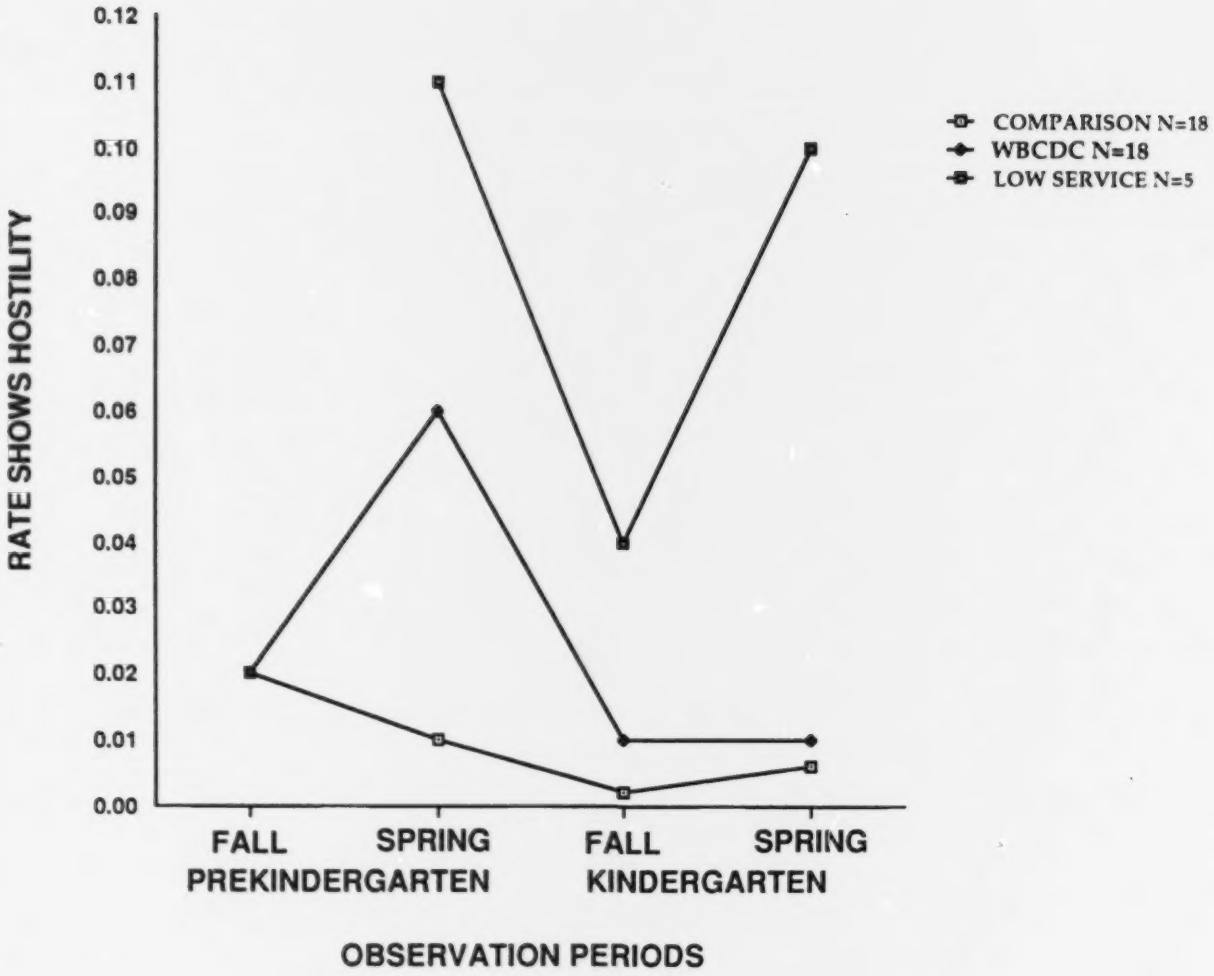

FIGURE 8 - MEAN RATES OF SHOWING HOSTILITY OF COMPARISON, WBCDC, AND LOW SERVICE GROUPS IN THE FALL AND SPRING OF THEIR PREKINDERGARTEN AND KINDERGARTEN YEARS

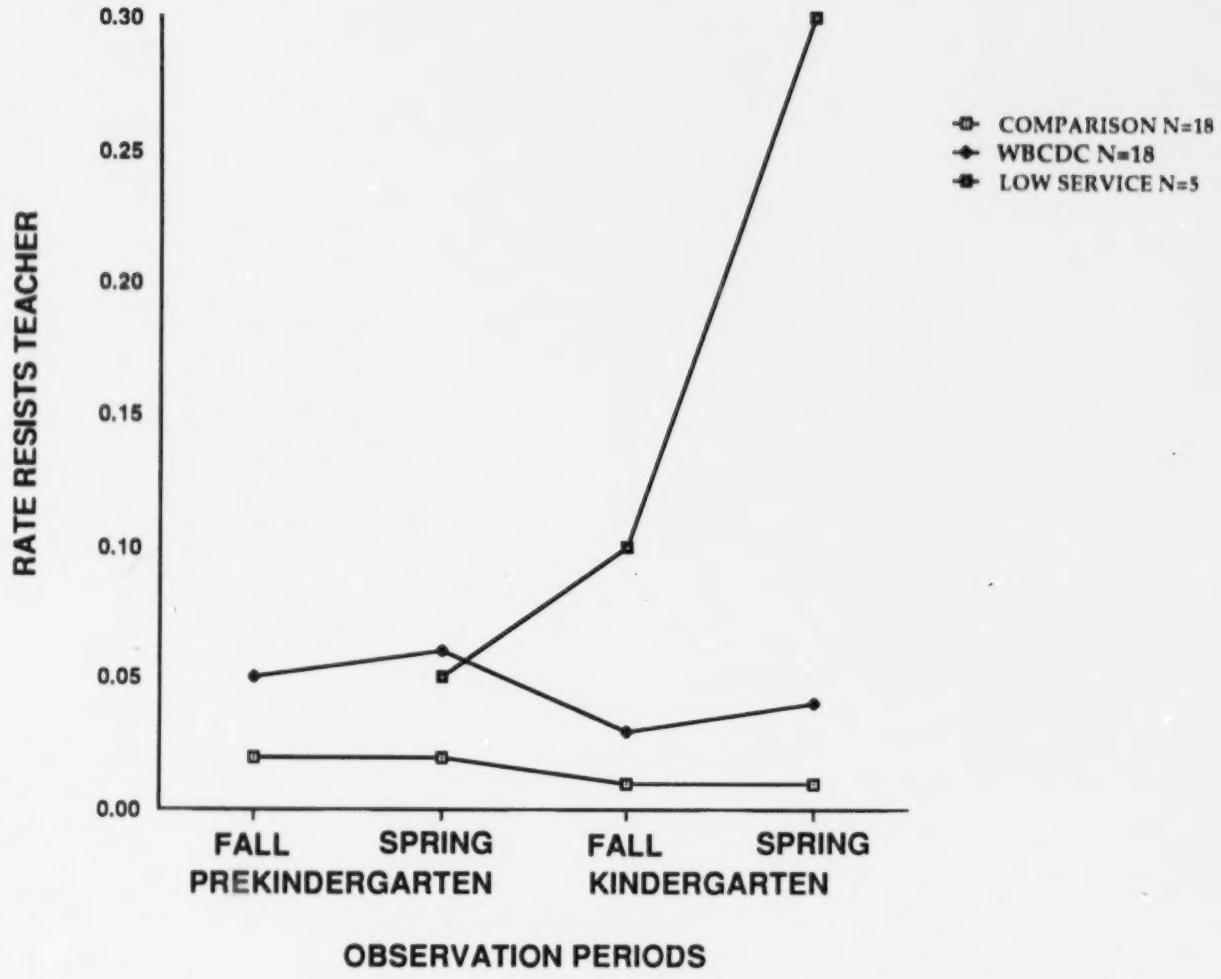

FIGURE 9 - MEAN RATES OF RESISTING THE TEACHER OF COMPARISON, WBCDC, AND LOW SERVICE GROUPS IN THE FALL AND SPRING OF THEIR PREKINDERGARTEN AND KINDERGARTEN YEARS

TABLE 6

Differences Between the Use of Time Variable Means of Comparison, WBCDC, and Low Service Groups in the Fall and Spring of their Prekindergarten and Kindergarten Years

	Observation Periods			
	PreKindergarten		Kindergarten	
USE OF TIME VARIABLES	FALL	SPRING	FALL	SPRING
Percent of Time in Mastery Activities:				
Comparison	49	52	52	61
	(10)	(12)	(10)	(11)
WBCDC	40****	48	45(*)	49***
	(8)	(8)	(14)	(11)
Low Service	--	37*	44	47*
	--	(6)	(11)	(15)
Percent of Time in Social Activities:				
Comparison	46	48	49	47
	(10)	(11)	(12)	(8)
WBCDC	51	52	59**	55*
	(10)	(12)	(13)	(12)
Low Service	--	63***	51	61****
	--	(3)	(10)	(8)
Percent of Time Uninvolved:				
Comparison	2.1	1.1	1.7	1.6
	(2.5)	(2)	(2)	(1.9)
WBCDC	1.5	.7	1.4	1.2
	(1.7)	(1)	(1.5)	(1.7)
Low Service	--	0	.7	1.8
	--	0	(1.1)	(1.6)

Values in parentheses are Standard Deviations.
WBCDC and Low Service Groups are compared with the Comparison Group.
Significance levels are based on t tests.

(*) $p < .10$ * $p < .05$ ** $p < .025$ *** $p < .01$ **** $p < .005$

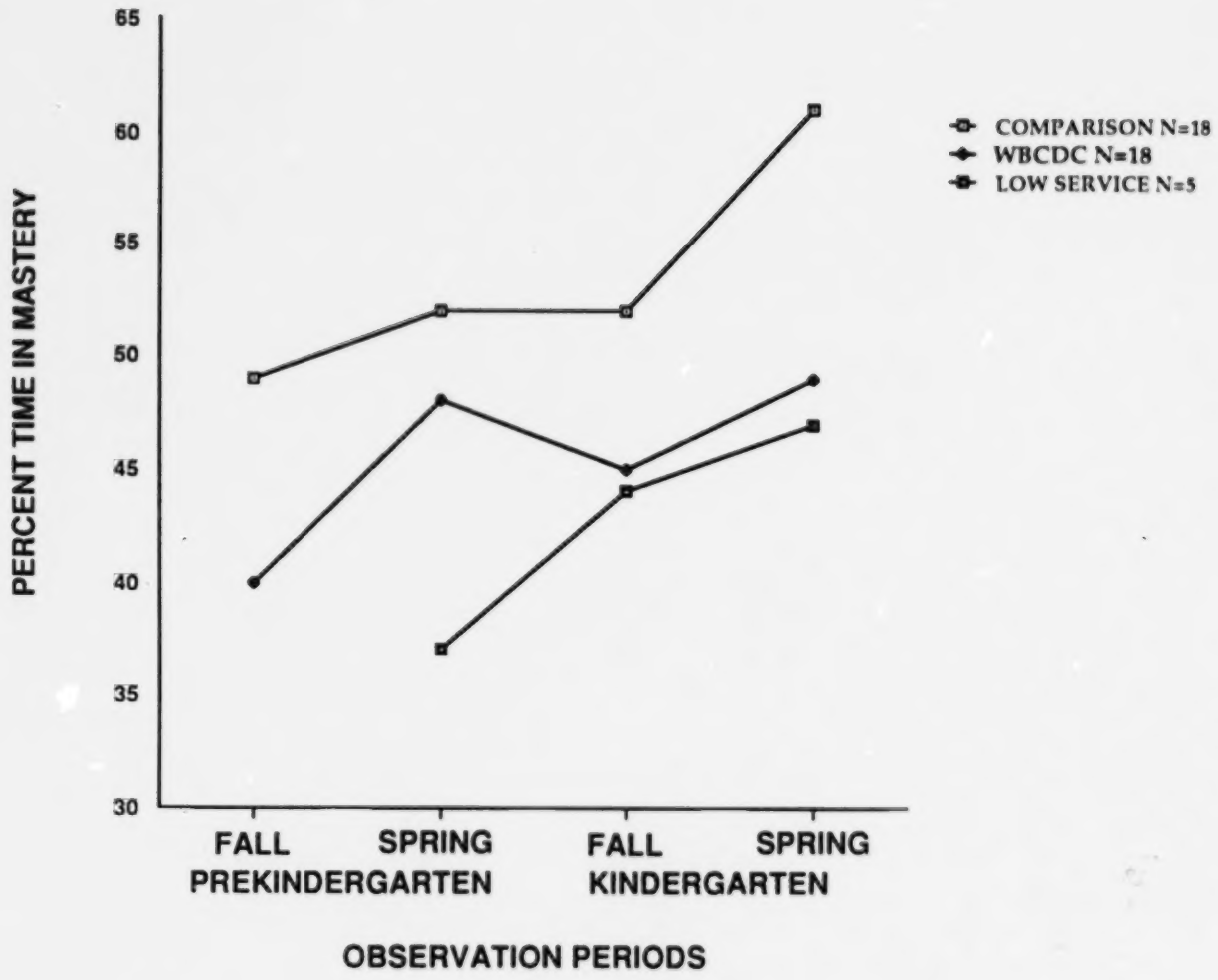

FIGURE 10 - MEAN PERCENTS OF TIME IN MASTERY ACTIVITIES OF COMPARISON, WBCDC, AND LOW SERVICE GROUPS IN THE FALL AND SPRING OF THEIR PREKINDERGARTEN AND KINDERGARTEN YEARS

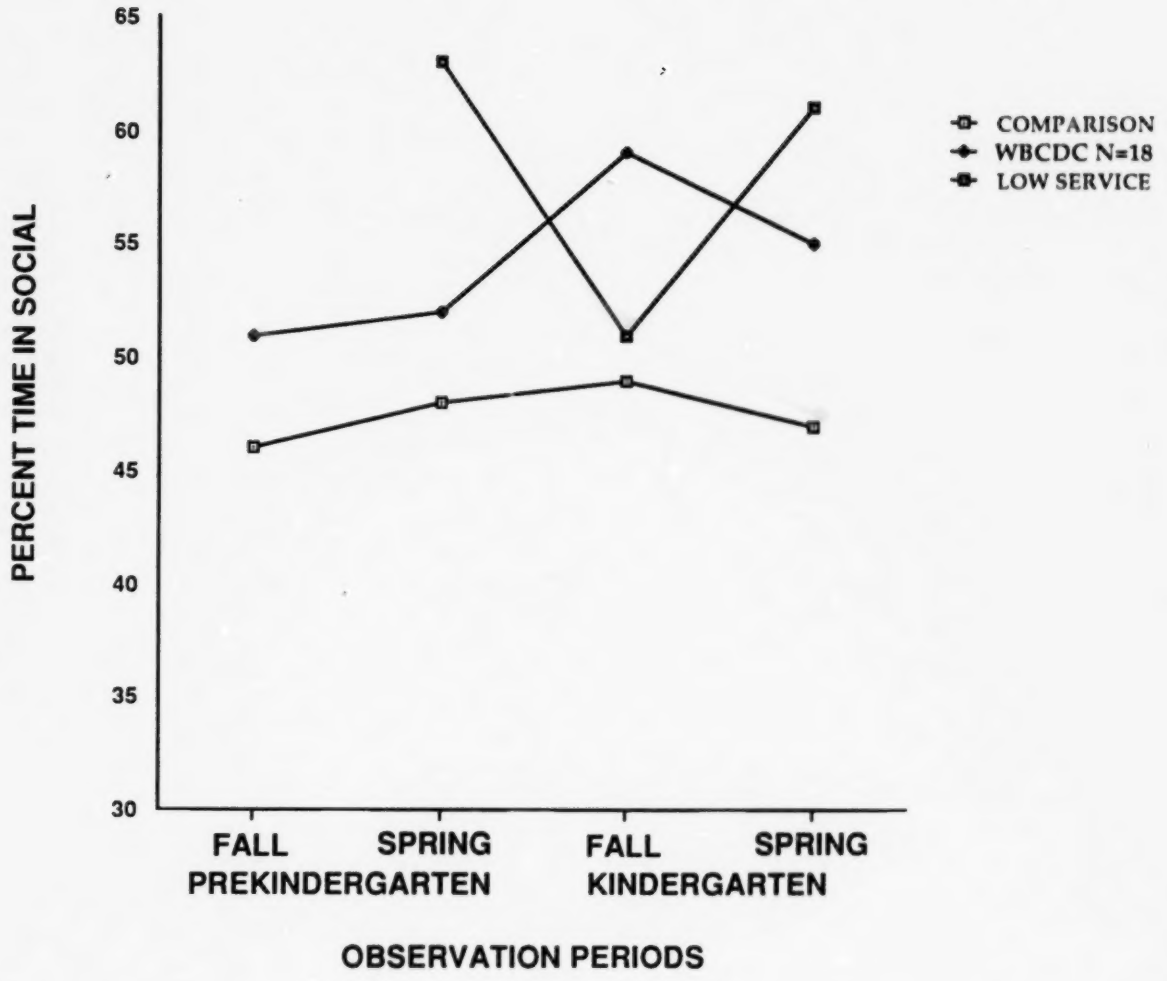

FIGURE 11 - MEAN PERCENTS OF TIME IN SOCIAL ACTIVITIES OF COMPARISON, WBCDC, AND LOW SERVICE GROUPS IN THE FALL AND SPRING OF THEIR PREKINDERGARTEN AND KINDERGARTEN YEARS

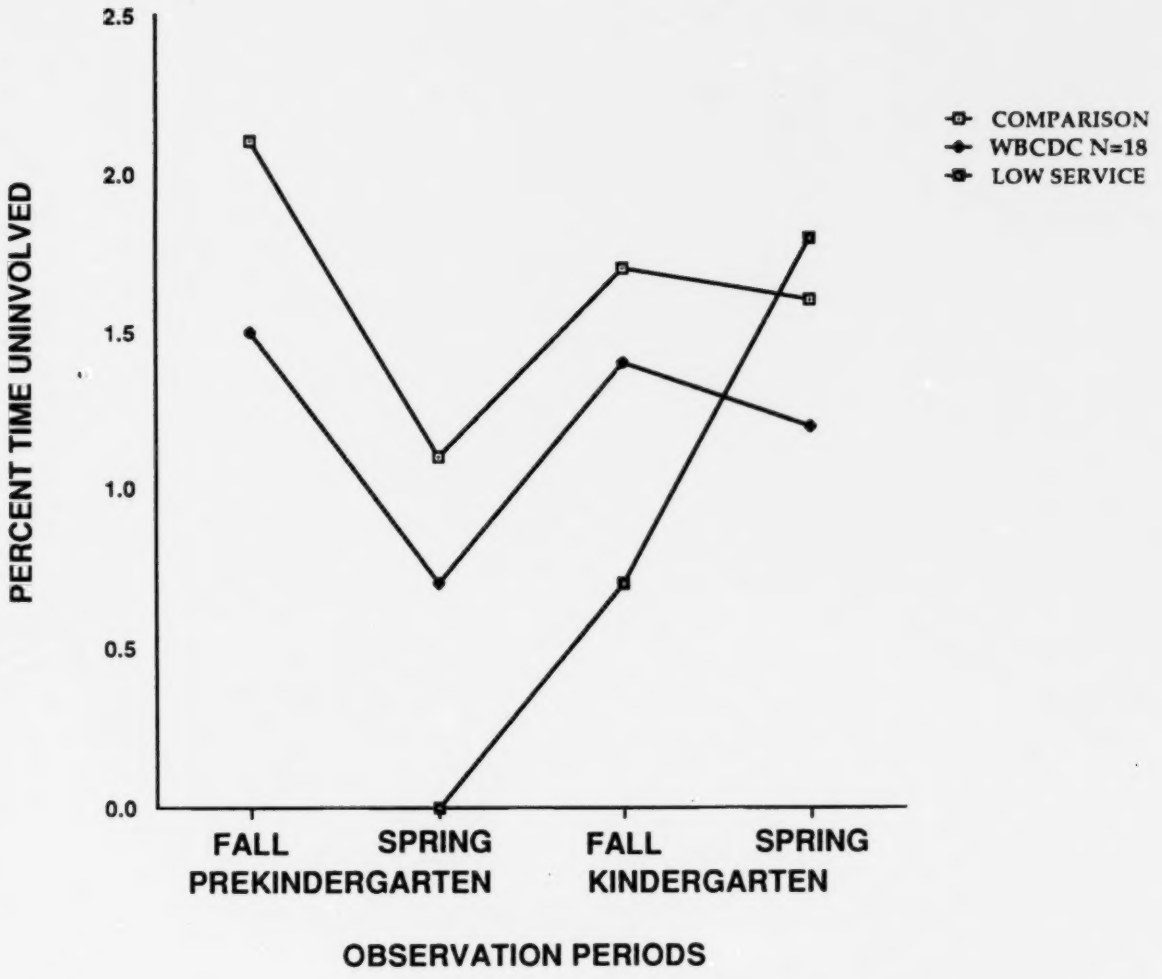

FIGURE 12 - MEAN PERCENTS OF TIME UNINVOLVED OF COMPARISON, WBCDC, AND LOW SERVICE GROUPS IN THE FALL AND SPRING OF THEIR PREKINDERGARTEN AND KINDERGARTEN YEARS